

CLAIMS

1) A method for determining, in a stratified medium whose physical properties are known or estimated, at least one zone where an interface between a fluid in place in the medium and a flushing fluid, of known different viscosities and densities, injected in the medium, moves in a stationary manner, in order to simplify construction of a model
5 simulating the flows in the medium, characterized in that it comprises the following stages:

- considering an *a priori* interface form, assuming that the fluid displacements at any point thereof are stationary,

10 - determining the pressure field on either side of the *a priori* interface,

- iteratively changing the form of the interface until the pressures on either side of at least part of the interface become equal at any point of this part, and

- assigning mean hydrodynamic properties uniformly to each zone of the medium delimited by each interface part, when said equalization is reached.

15 2) A method as claimed in claim 1, characterized in that, for lack of obtaining a pressure equalization on either side of the interface along the latter, the interface is segmented into several parts and the form of these different parts is modified iteratively and separately, until a pressure equalization is obtained on either side thereof, the extent of each interface part, when said equalization is reached, delimiting a favourable zone to
20 which mean hydrodynamic properties are uniformly assigned.

3) A method as claimed in claim 1 or 2, characterized in that the form of at least one zone of the medium delimited by a stationary displacement interface is determined, which corresponds to different values of the flushing fluids viscosity, and the viscosity for which the stationary displacements in said medium are optimized is selected.